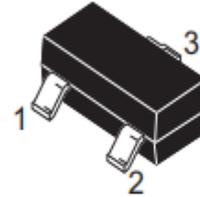


## NPN Silicon Epitaxial Planar Transistor

### Features

- For switching and AF amplifier applications
- As complementary types the PNP transistors BC856...BC858 is recommended.

SOT-23



1.Base 2.Emitter 3.Collector

### Absolute Maximum Ratings (Ta=25°C)

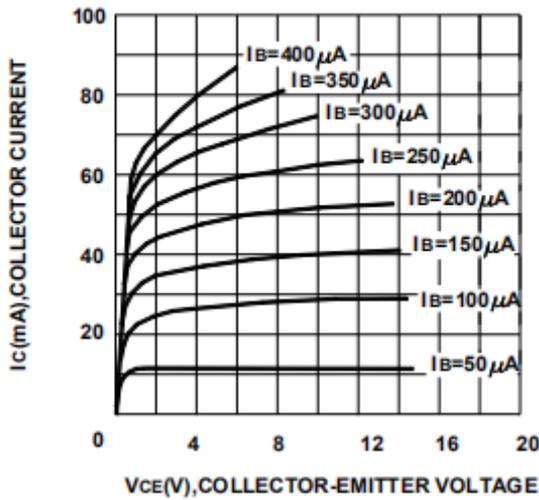
Parameter		Symbol	Value	Unit
Collector Base Voltage	BC846	$V_{CBO}$	80	V
	BC847	$V_{CBO}$	50	V
	BC848	$V_{CBO}$	30	V
Collector Emitter Voltage	BC846	$V_{CEO}$	65	V
	BC847	$V_{CEO}$	45	V
	BC848	$V_{CEO}$	30	V
Emitter Base Voltage	BC846, BC847 BC848	$V_{EBO}$	6	V
		$V_{EBO}$	5	V
Collector Current		$I_C$	100	mA
Peak Collector Current		$I_{CM}$	200	mA
Power Dissipation		$P_{tot}$	300	mW
Junction Temperature		$T_J$	150	°C
Storage Temperature Range		$T_{STG}$	- 65 to + 150	°C

**Characteristics (Ta=25°C)**

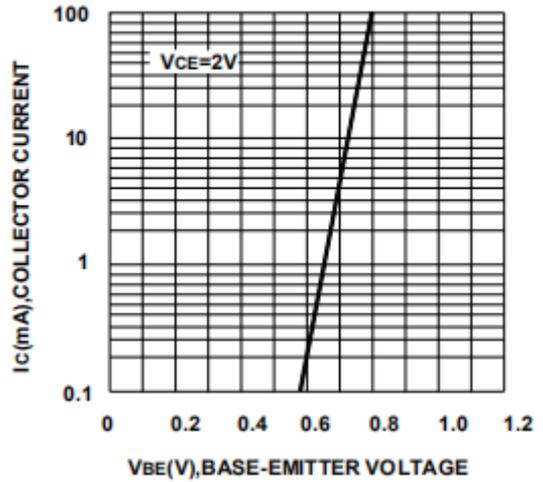
Parameter	Symbol	Min.	Typ.	Max.	Unit	
DC Current Gain at $V_{CE} = 5\text{ V}$ , $I_C = 2\text{ mA}$	Current Gain Group A	$h_{FE}$	110	-	220	-
	B	$h_{FE}$	200	-	450	-
	C	$h_{FE}$	420	-	800	-
Collector Base Cutoff Current at $V_{CB} = 30\text{ V}$	$I_{CBO}$	-	-	15	nA	
Collector Base Breakdown Voltage at $I_C = 100\text{ }\mu\text{A}$	BC846	$V_{(BR)CBO}$	80	-	-	V
	BC847	$V_{(BR)CBO}$	50	-	-	V
	BC848	$V_{(BR)CBO}$	30	-	-	V
Collector Emitter Breakdown Voltage at $I_C = 2\text{ mA}$	BC846	$V_{(BR)CEO}$	65	-	-	V
	BC847	$V_{(BR)CEO}$	45	-	-	V
	BC848	$V_{(BR)CEO}$	30	-	-	V
Collector Emitter Breakdown Voltage at $I_C = 100\text{ }\mu\text{A}$	BC846, BC847	$V_{(BR)EBO}$	6	-	-	V
	BC848	$V_{(BR)EBO}$	5	-	-	V
Collector Emitter Saturation Voltage at $I_C = 10\text{ mA}$ , $I_B = 0.5\text{ mA}$ at $I_C = 100\text{ mA}$ , $I_B = 5\text{ mA}$	$V_{CEsat}$	-	-	250	mV	
	$V_{CEsat}$	-	-	600	mV	
Base Emitter On Voltage at $V_{CE} = 5\text{ V}$ , $I_C = 2\text{ mA}$ at $V_{CE} = 5\text{ V}$ , $I_C = 10\text{ mA}$	$V_{BE(on)}$	580	-	700	mV	
	$V_{BE(on)}$	-	-	720	mV	
Transition Frequency at $V_{CE} = 5\text{ V}$ , $I_C = 10\text{ mA}$ , $f = 100\text{ MHz}$	$f_T$	-	300	-	MHz	
Output Capacitance at $V_{CB} = 10\text{ V}$ , $f = 1\text{ MHz}$	$C_{ob}$	-	-	6	pF	
Input Capacitance at $V_{EB} = 0.5\text{ V}$ , $f = 1\text{ MHz}$	$C_{ib}$	-	9	-	pF	

**Rating And Characteristics Curves**

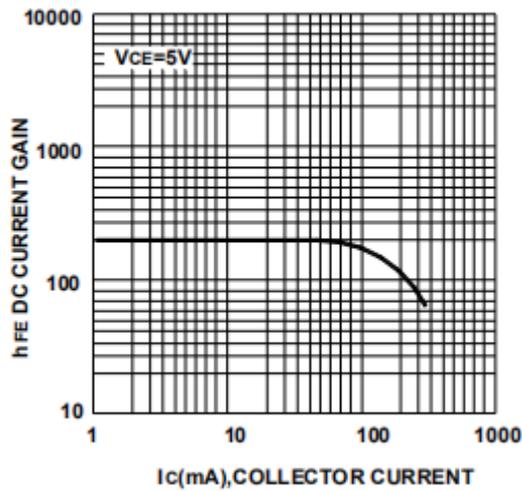
**STATIC CHARACTERISTIC**



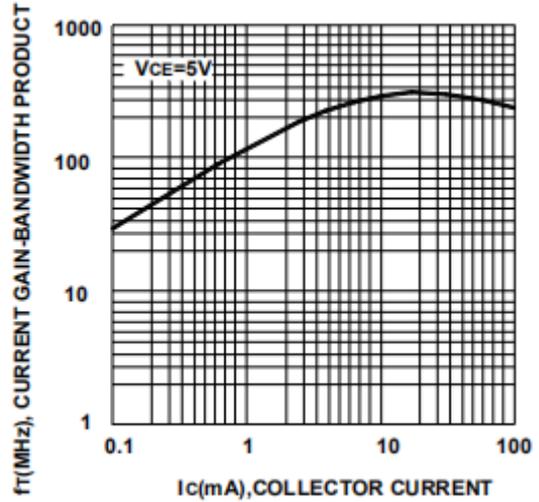
**BASE-EMITTER ON VOLTAGE**



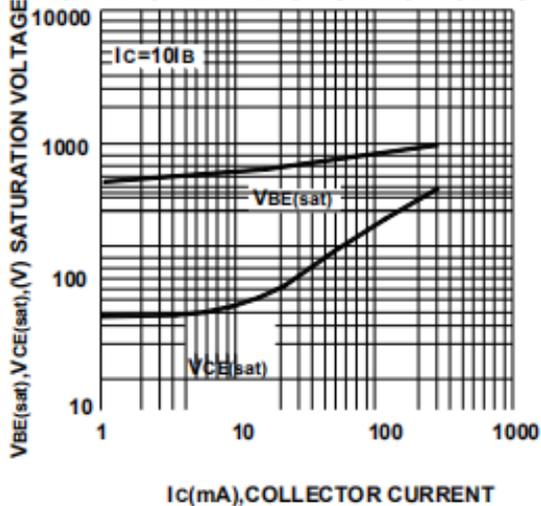
**DC CURRENT GAIN**



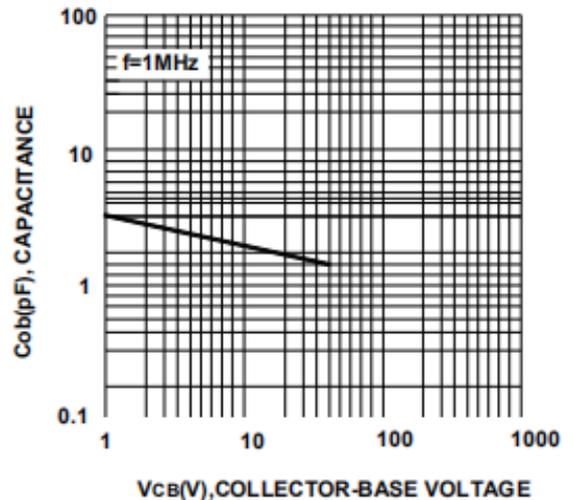
**CURRENT GAIN BANDWIDTH PRODUCT**



**BASE-EMITTER SATURATION VOLTAGE  
COLLECTOR-EMITTER SATURATION VOLTAGE**

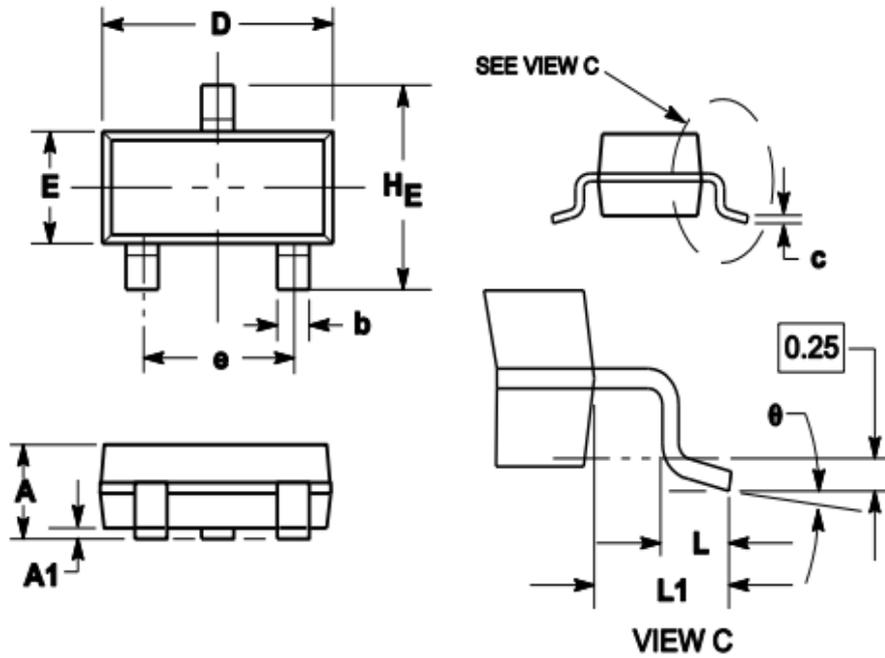


**COLLECTOR OUTPUT CAPACITANCE**

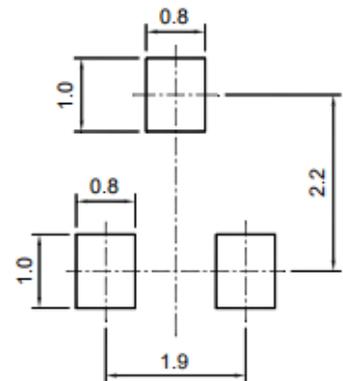


**Package Outline**

SOT-23



Symbol	Dimensions in millimeter		
	Min.	Typ.	Max.
A	0.900	1.025	1.150
A1	0.000	0.050	0.100
b	0.300	0.400	0.500
c	0.080	0.115	0.150
D	2.800	2.900	3.000
E	1.200	1.300	1.400
HE	2.250	2.400	2.550
e	1.800	1.900	2.000
L1	0.550REF		
L	0.300		0.500
θ	0°		8°



SOT-23

**Recommended soldering pad**

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[NJVMJD148T4G](#) [NSVMMBT6520LT1G](#) [NTE187A](#) [NTE195A](#) [NTE2302](#) [NTE2330](#) [NTE2353](#) [NTE316](#) [IMX9T110](#) [NTE63](#) [NTE65](#)  
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